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TS40
Flashing LED Edge Lit Signs
MUTCD Compliant

General Description

The TS40 conforms to the specifications of the Federal Highway Administration (FHWA) set forth in the Manual on Uniform Traffic Control Devices (MUTCD). Using the latest advances in LED technology, the TS40 employs a set of synchronized high-intensity LEDs to extend the range of visibility of the sign during the day or night. Furthermore, the LEDs are flashed, which increases driver awareness of the sign.

Why Our Signs are Better

High Visibility

- Type IX reflective sheeting provides outstanding reflective brightness, day or night.
- High intensity LEDs extend the visibility of the sign under all weather conditions.

Superior Performance

- Low power LED technology reduces system power consumption and operating cost.

Outstanding Durability

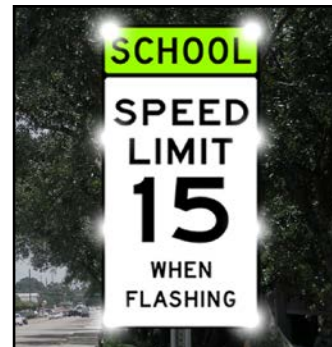
- Highway grade .080 aluminum construction provides resistance to corrosion.
- The use of highway grade Type IX sheeting helps to maintain long term reflectivity.
- Stainless steel security fasteners and Tufnut mounting hardware included to keep the sign secure.
- Signs are weatherproof to prevent outside elements from entering the internal casing.

Features

- MUTCD section 2A.07 and 2A.08 compliant.
- High visibility, low power consumption.
- Fast, easy installation, low maintenance.
- Field adjustable LED flashing duration (30 seconds standard).
- Vandal-resistant mounting hardware included.
- Optional battery backup, not affected by local grid power outages, 12 day autonomy (flashing 24/7).



Stop Sign (R1-1)



School Speed Limit (S5-1)



Double sided configuration

 **SIGN LED FLASHING DURATION IS NOW ADJUSTABLE IN THE FIELD**

Solar TS40

A solar powered TS40 is available that features off-grid power generation and independent flashing control.

Features

- Solar powered with battery backup, no AC power required.
- MUTCD section 2A.07 and 2A.08 compliant.
- Installs easily onto any new or existing sign post.
- High intensity LEDs flash in unison, once per second, commanding the attention of drivers day and night.
- Activation options: Continuous 24/7 Flashing, Programmable Timer, or Wireless Push-button.



 **OPTIONAL LED DIMMING AT NIGHT TO REDUCE GLARE FOR MOTORISTS**

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*Stop
(R1-1)*



*Stop and Pedestrian
Combo*



*Yield
(R1-2)*



*State Law (Yield to,
Stop For) Pedestrians
(R1-6, R1-6A)*



*Speed Limit
(R2-1)*



*Do Not Enter
(R5-1)*



*Wrong Way
(R5-1A)*



*Do Not Stop On
Tracks (R8-8)*



*School Speed Limit
(S5-1)*



*Rail Grade Crossing
(W10-1)*



*Bicycle Warning
(W11-1)*



*Turn Arrow
(W1-1)*

TS40 Specifications*

Compliance

- MUTCD section 2A.07 and 2A.08 compliant

Construction

- .080 highway grade aluminum and stainless fasteners
- Tufnut security mounting hardware (pole not included)

LED Lighting

- White or Yellow sign background: White LEDs standard, Yellow LEDs optional
- Red sign background: Red LEDs standard, White LEDs optional
- LED 1-1/4" bullet style in sign perimeter border
- Flash rate 50 to 60 times per minute
- Field adjustable LED flashing duration (30 seconds standard)
- LED life expectancy over 100,000 hours
- Visible up to 2 miles away
- Field replaceable grommet mounted lights
- Sealed DOT approved lighting

Circuitry Technology

- Sealed PCB technology
- 24 hour operation / dusk to dawn operation

Solar / AC / Battery Specifications**

- 15W solar cell
- AC - 120V, 240V; 120V battery maintainer
- DC - 6 volt 18AH SLA battery pack (3 to 5 year battery life)
- Up to 12 days in 24/7 operation


Options


- Battery backup for AC signs
- Additional LED lights
- Standard 7 day or deluxe 365 day programmable timers
- Wireless activation, keyfob transmitter, photo-sensor bollard, door switch.
- Wired, wireless push-button activation; keyed on/off switch
- LED dimming at night to reduce glare for motorists (solar only)
- Anti-graffiti protective overlay

Warranty

- 10 Year Solar Panel
- 5 Year Sign Construction
- 2 Year LED Lights & Circuitry
- 1 Year Battery

Reflective Sheeting

 Type IX Fluorescent Yellow Green (FYG)
(Standard for warning signs in school zone areas)

 Type IX (Yellow, Red, White)
(Standard for non-school zone areas)

* All specifications subject to change without notice.

** Special configuration (wireless, etc.) signs will have 12 volt 22AH SLA battery with 20W solar cell (22.75" x 16.75" x 1.125", 4.5" depth with bracket).

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Optional Push-Button Activation
 Provides a simple and convenient way for pedestrians to activate the signs.




Optional Photo-Sensor Bollard Activation
 Activates signs when pedestrian passes between two bollards.




Optional Double Sided Configuration
 Our double sided configuration is available with an attached 2-1/4" Telespar square tube sleeve. The Telespar sign support system allows for fast and easy installation. Just insert the sign's 2-1/4" square tube sleeve over a 2" Telespar pole, insert the bolts and tighten.



Optional Door Switch Activation
 Activates signs when a door is opened.



Optional Keyfob Remote Control Transmitter
 Temporarily activates signs with wireless signal.



Ordering Codes

Product Code	Sign Type and Size ⁷	Sign Faces	Power ³	Activation Options (select only one)	Reflective Sheeting
SI-TS40 ^{1,6}	R1-1-24: 24" x 24" Stop R1-1-30: 30" x 30" Stop R1-1-36: 36" x 36" Stop R11W11224: 24" Stop and Pedestrian Combo R11W11230: 30" Stop and Pedestrian Combo R1-2-36: 36" x 36" Yield R1-6-12x36: 12" x 36" State Law Yield to Pedestrians R1-6A-12x36: 12" x 36" State Law Stop For Pedestrians R2-1-18x24: 18" x 24" Speed Limit R2-1-24x30: 24" x 30" Speed Limit R2-1-36x48: 36" x 48" Speed Limit R5-1-24: 24" x 24" Do Not Enter R5-1-30: 30" x 30" Do Not Enter R5-1-36: 36" x 36" Do Not Enter R5-1A-24x36: 24" x 36" Wrong Way R8-8-18x24: 18" x 24" Do Not Stop On Tracks R8-8-24x30: 24" x 30" Do Not Stop On Tracks S5-1-24x48: 24" x 48" School Speed Limit XX W10-1-30: 30" x 30" Rail Grade Crossing W11-1-30: 30" x 30" Bicycle Warning W11-1-36: 36" x 36" Bicycle Warning W1-1L-24: 24" x 24" Turn Left Arrow W1-1L-30: 30" x 30" Turn Left Arrow W1-1L-36: 36" x 36" Turn Left Arrow W1-1R-24: 24" x 24" Turn Right Arrow W1-1R-30: 30" x 30" Turn Right Arrow W1-1R-36: 36" x 36" Turn Right Arrow	D: Double Sided ²	AC: AC B: Battery ⁴ S: Solar SD: Solar Dimming ⁸	1: Wireless Communication Sign for Wired Activation (push-button not included) 2: Standard Programmable 7 Day Timer 3: Photocell 4: Keyfob Remote Control Transmitter 5: Single Sign for Wired Activation (push-button not included) 6: Deluxe Programmable 365 Day Timer 7: Single Sign for Wireless Activation (push-button not included) 9: Wireless Communication Sign for Wireless Activation (push-button not included) 10: Wireless Communication Sign for Wired Push-button with Audio Caution Message Capability (AC-XAV2E-LED push-button not included) 11: Photo-Sensor Bollards 12: Door Switch	A: Type IX Fluorescent Yellow Green (FYG) ⁵ B: Type IX I: Anti-graffiti Protective Overlay

1. SI-TS40 is used in standalone applications, without a system controller.
 2. Single sided signs standard. Not available with combo signs.
 3. 24/7 operation standard.
 4. Includes spare battery and charger.
 5. Fluorescent Yellow Green (FYG) sheeting should be used in school zone areas.
 Many additional sign types, messages and sizes are available. Call for details.

6. When ordering, specify size & shape (square, round) of your sign pole. Pole not included, sold separately.
 7. Signs have 4 to 8 LEDs depending on sign size and configuration.
 8. Sign LEDs are dimmed at night to reduce glare for motorists. If solar panel voltage is 66% or less of the battery voltage, then the sign LEDs will go into auto-dimming mode. Only works on 24/7 signs.

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How to Specify the TS40

1. Sign Materials - Construction - Compliance

- a. Sign reflective sheeting in compliance with current MUTCD requirements for reflectivity, wording, materials and mounting guidelines.
- b. Pole mounting requirements per MUTCD guidelines.
- c. Sign constructed of .080 aluminum with stainless / aluminum fasteners and weatherproof sealant.
- d. All mounting hardware fasteners shall be theft deterrent hardware preferably Tufnut security hardware where applicable.
- e. 3/8" x 3" stainless steel tap bolts for standard mounting hardware (other mounting options available).
- f. Battery access compartment located at lower portion of sign to allow access to battery compartment for maintenance (field replaceable battery).
- g. Solar signs to have a 2" to 4" wide casing, depending on model, between front and rear sign faces to enclose all wiring, battery, PCB and LED light connections. AC powered signs 2" wide casing.
- h. Security keyed ON/OFF switch located on side of casing controlling operation.
- i. Vented weatherproof casing allowing ambient air to circulate for internal components and prevent condensation and excessive heat buildup.
- j. Compression type solar panel connector allowing optimum directional placement of solar collector.
- k. Anti-theft placards and decals for theft / vandalism deterrents.
- l. Serial # plate with manufacture date for informational and warranty purposes.

2. Battery

	12 Volt 12 Volt 22000mAH SLA	6 Volt 2 - 6 Volt 9000mAh SLA (18 Ah Total)
Dimensions	7.14" x 3.03" x 6.59"	5.95" x 1.34" x 3.70"
Weight	12.74 lb.	3.09 lb.
Terminal Connector	Nut/Bolt	T2 - Spade
Operating Temperature	-40°F to +156°F	-40°F to +156°F
Warranty	1 Year	1 Year

- a. Battery mounting with aluminum fasteners and brackets for in-field replacement after life cycle has expired.
- b. Battery casing fully sealed in a moisture and corrosion proof casing.
- c. Required battery replacement every 18 months from manufacture date.

3. Solar Panel Collector

- a. Solar panels to be 6/12 volt 15/20/30 watt collector type depending on type of sign, region, LED light quantities and application uses.

	15 Watt	20 Watt	30 Watt
Max Power	15W	20W	30W
Operating Voltage	8.0V	17.2V	17.4V
Operating Current	1.88A	1.16A	1.73A
Max Voltage	10.8V	21.6V	21.6V
Operating Temperature	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Dimensions	16.75" x 14.00" x 1.125"	22.75" x 16.75" x 1.125"	26.5" x 16.75" x 1.125"
Type	Polycrystalline	Polycrystalline	Polycrystalline

- b. Solar panel bracket constructed of aluminum alloy.
- c. Schedule 40 3/4" aluminum tubing attached to the solar panel bracket to the upper casing of the sign casing. Panel must face south.
- d. Angle of panel shall be 45° to 65° depending on region. Special attention required to insure solar collector has good access to solar power with no obstructions for optimum operation.
- e. Electrical connectors shall be insulated spade type connectors.
- f. Tempered glass solar cell sealer/protector.

4. LED Lights (Light Emitting Diodes)

- a. Sign shall have a series of either 4 - 8 LEDs depending on sign size and configuration.
- b. All LEDs shall be compliant to MUTCD Section 2A.07 and match colors acceptable to each type of signal per this specification.
- c. LED flash rate at 50 to 60 times per minute per MUTCD Section 2A.07 requirements.
- d. LED light dimensions: 1/8" Cree LED inside a 1-1/4" diameter lens.
- e. 100,000 hour rated LED life (11.415 years).
- f. High impact acrylic water/vibration proof housing lens.
- g. Completely resin sealed lens.
- h. Operating voltage: 6/12 VDC / Amp Draw 85ma.
- i. Rubber grommet mounted (for easy in-field replacement) into a 1-1/4" hole.
- j. Output power of LEDs approximate 60,000 mcd brightness.
- k. LEDs wired in series for simultaneous flash pattern per MUTCD.
- l. Wiring completely enclosed in sign casing with access for replacement.

5. Circuitry / LED Lighting Control Unit

- a. Circuit shall have a minimum of 4 output LED light circuits for use.
- b. Circuit shall control flash rates at 50 to 60 times per minute.
- c. Circuit shall flash 500 milliseconds / 150 milliseconds per flash.
- d. Activation duration shall be field adjustable in one-second increments, over a range of 1 to 99 seconds (30 seconds standard).
- e. Available dusk-to-dawn flash mode.
- f. Micro-controller technology.
- g. Keyed "ON/OFF" activation for tamper/vandalism protection.
- h. Operation of circuit temperatures -40°C to +80°C.
- i. Circuit enclosed in weatherproof casing.
- j. Low voltage protection program (protecting from total discharge of battery).
- k. All wiring connections in accordance to standard wiring protection guidelines.

6. Warranty

- 10 Year Solar Panel
- 5 Year Sign Construction
- 2 Year LED Lights & Circuitry
- 1 Year Battery

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